

SEQUENCE LISTING

&lt;110&gt; E.I. du Pont de Nemours and Company

&lt;120&gt; Aspartate Kinase

&lt;130&gt; BB1430 PCT

&lt;140&gt;

&lt;141&gt;

&lt;150&gt; 60/172944

&lt;151&gt; 1999-12-21

&lt;160&gt; 24

&lt;170&gt; Microsoft Office 97

&lt;210&gt; 1

&lt;211&gt; 565

&lt;212&gt; DNA

&lt;213&gt; Zea mays

&lt;220&gt;

&lt;221&gt; unsure

&lt;222&gt; (127)

&lt;400&gt; 1

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ggcatgggca ttggatcatt gatcatgttt tgcttgaaac aagtatgtct tccaggttct 420
cagccaatga ctgcaaaact gtgtttctgt tttagaactg tttgcagaca ccagtgaagt 480
gcgagcaccg attgtcaaca agatggcaag cctgtgatat aattccaact gtctctaata 540
aatatatata ataaacatta tcaat 565

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&lt;210&gt; 2

&lt;211&gt; 97

&lt;212&gt; PRT

&lt;213&gt; Zea mays

&lt;220&gt;

&lt;221&gt; UNSURE

&lt;222&gt; (42)

&lt;400&gt; 2

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His Glu Val Glu Glu Leu Glu Lys Ile Ala Ile Val Arg Leu Leu Gln
  1             5             10             15

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Gln Arg Ala Ile Ile Ser Leu Ile Gly Asn Val Glu Gln Ser Ser Leu
      20             25             30

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Ile Leu Glu Lys Thr Gly Arg Val Leu Xaa Glu Ser Gly Val Asn Val
  35             40             45

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Gln Met Ile Ser Gln Gly Ala Ser Lys Val Asn Met Ser Leu Ile Val  
50 55 60

His Asp Ser Asp Ala Lys Ala Leu Val Glu Ala Leu His Gln Ala Phe  
65 70 75 80

Phe Glu Asp Asp Val Leu Ser Gln Val Glu Ala Glu Asn Leu Leu Val  
85 90 95

Gly

<210> 3  
<211> 513  
<212> DNA  
<213> Zea mays

<220>  
<221> unsure  
<222> (474)

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acccgaaccg ggcctcgcgg tgcaagaggg ttgtcaatgg tggtcgccga ctccaccagc 180  
cgtcggggcca agcaagcgga cggcggggac ggcgtccttg gggcgctgt tctcggaggg 240  
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gtgtcgtcgg ccgcgaggat ggctgaggtg gccggcctca tcctgacgtt ccccgaggag 360  
cgccccgtcg tcgttctctc tgccatgggg aaaaccacca acaaccttct ccttgctggg 420  
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tcaaaaagcc taaaatatca aagtatccca act 513

<210> 4  
<211> 152  
<212> PRT  
<213> Zea mays

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Ala Pro Arg Arg Leu Val Pro Ser Ile Pro Pro Ala Ser Ser Gly His  
20 25 30

Val Arg Gly Leu Ala Cys Phe Gly Thr Arg Thr Gly Pro Arg Gly Ala  
35 40 45

Arg Gly Leu Ser Met Val Val Ala Asp Ser Thr Ser Arg Arg Ala Lys  
50 55 60

Gln Ala Asp Gly Gly Asp Gly Val Leu Gly Ala Pro Val Leu Gly Gly  
65 70 75 80

Leu Gly Met Glu Gly Leu Gly Asp Gln Leu Ser Val Val Met Lys Phe  
85 90 95

Gly Gly Ser Ser Val Ser Ser Ala Ala Arg Met Ala Glu Val Ala Gly  
100 105 110

Leu Ile Leu Thr Phe Pro Glu Glu Arg Pro Val Val Val Leu Ser Ala  
 115 120 125

Met Gly Lys Thr Thr Asn Asn Leu Leu Leu Ala Gly Arg Lys Gly Asn  
 130 135 140

Lys Val Trp Ser Tyr His Val Phe  
 145 150

<210> 5  
 <211> 1985  
 <212> DNA  
 <213> Zea mays

<220>  
 <221> unsure  
 <222> (532)

<220>  
 <221> unsure  
 <222> (1180)

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 caccagccgt cgggccaaagc aagcggacgg cggggacggc gtccttgggg cgctgttct 240  
 cggagggttc gggatggagg gattggggga tcagctcagc gtggtgatga agttcggggg 300  
 gtcctcgggtg tcgtcggccg cgaggatggc tgaggtggcc ggcctcatcc tgacgttccc 360  
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 cattacaact gatgaatttg gtaatgcgga tatcttagaa gcaacctatc ctgctgttgc 780  
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 gagacctgct agagaagggtg atattccagt tagggttaag aattcataca accctaaagc 1140  
 tccaggcacc cttattacca gacaaagaga catggataan ggtctggttg tactaactag 1200  
 catagtgtc aagtcaaagtg tcactatgtt ggacattgtg agcactcgga tgcttggtca 1260  
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 ggcaagcctg tgatataatt ccaactgtct ctaatcaata tatataataa acattatcaa 1980  
 tatct 1985

Asp Ala Phe Asp Ile Gly Phe Ile Thr Thr Asp Glu Phe Gly Asn Ala  
225 230 235 240

Asp Ile Leu Glu Ala Thr Tyr Pro Ala Val Ala Lys Arg Leu His Gly  
 245 250 255  
 Asp Trp Ile Gln Asp Pro Ala Ile Pro Val Val Thr Gly Phe Leu Gly  
 260 265 270  
 Lys Gly Trp Lys Ser Gly Ala Val Thr Thr Leu Gly Arg Gly Gly Ser  
 275 280 285  
 Asp Leu Thr Ala Thr Thr Ile Gly Lys Ala Leu Gly Leu Arg Glu Ile  
 290 295 300  
 Gln Val Trp Lys Asp Val Asp Gly Val Leu Thr Cys Asp Pro Asn Ile  
 305 310 315 320  
 Tyr Pro His Ala Lys Thr Val Pro Tyr Leu Thr Phe Glu Glu Ala Thr  
 325 330 335  
 Glu Leu Ala Tyr Phe Gly Ala Gln Val Leu His Pro Gln Ser Met Arg  
 340 345 350  
 Pro Ala Arg Glu Gly Asp Ile Pro Val Arg Val Lys Asn Ser Tyr Asn  
 355 360 365  
 Pro Lys Ala Pro Gly Thr Leu Ile Thr Arg Gln Arg Asp Met Asp Xaa  
 370 375 380  
 Gly Leu Val Val Leu Thr Ser Ile Val Leu Lys Ser Asn Val Thr Met  
 385 390 395 400  
 Leu Asp Ile Val Ser Thr Arg Met Leu Gly Gln Tyr Gly Phe Leu Ala  
 405 410 415  
 Arg Val Ser Gly Ile Cys Tyr Ile Glu Asp Leu Cys Ile Ser Val Asp  
 420 425 430  
 Cys Val Ala Thr Ser Glu Val Ser Val Ser Val Ser Leu Asp Pro Ser  
 435 440 445  
 Lys Ile Trp Ser Arg Glu Leu Ile Gln Gln Ala Ser Glu Leu Asp His  
 450 455 460  
 Val Val Glu Glu Leu Glu Lys Ile Ala Ile Val Arg Leu Leu Gln Gln  
 465 470 475 480  
 Arg Ala Ile Ile Ser Leu Ile Gly Asn Val Glu Gln Ser Ser Leu Ile  
 485 490 495  
 Leu Glu Lys Thr Gly Arg Val Leu Arg Lys Ser Gly Val Asn Val Gln  
 500 505 510  
 Met Ile Ser Gln Gly Ala Ser Lys Val Asn Met Ser Leu Ile Val His  
 515 520 525  
 Asp Ser Asp Ala Lys Ala Leu Val Glu Ala Leu His Gln Ala Phe Phe  
 530 535 540  
 Glu Asp Asp Val Leu Ser Gln Val Glu Ala Glu Asn Leu Leu Val Gly  
 545 550 555 560

09890813-030201  
 T02020-ET000860

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 <211> 1953  
 <212> DNA  
 <213> Zea mays

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 cgaaccgggc ctgcggtgc aagaggggtg tcaatgggtg tcgccgactc caccagccgt 180  
 cgggccaaagc aagcggacgg cggggacggc gtccttgggg cgcctgttct cggagggctc 240  
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 aaggcagtag ggtgtggagt tatccatgtt tctgaaatcg aagagtggaa tatggtcaaa 480  
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 ttccaggttc tcagccaatg actgcaaaac tgtgtttctg ttttagaact gtttgcagac 1860  
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 tgtctctaata caatatatat aataaacatt atc 1953

<210> 8  
 <211> 555  
 <212> PRT  
 <213> Zea mays

<400> 8  
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 1 5 10 15  
 Ser Ile Pro Pro Ala Ser Ser Gly His Val Arg Gly Leu Ala Cys Phe  
 20 25 30  
 Gly Thr Arg Thr Gly Pro Arg Gly Ala Arg Gly Leu Ser Met Val Val  
 35 40 45  
 Ala Asp Ser Thr Ser Arg Arg Ala Lys Gln Ala Asp Gly Gly Asp Gly  
 50 55 60

**PCT/US00/34396**

**DODGE**

Lys Val Val Leu Thr Ser Ile Val Leu Lys Ser Asn Val Thr Met Leu  
 385 390 395 400  
 Asp Ile Val Ser Thr Arg Met Leu Gly Gln Tyr Gly Phe Leu Ala Arg  
 405 410 415  
 Val Phe Ala Ile Phe Glu Asp Leu Cys Ile Ser Val Asp Cys Val Ala  
 420 425 430  
 Thr Ser Glu Val Ser Val Ser Val Ser Leu Asp Pro Ser Lys Ile Trp  
 435 440 445  
 Ser Arg Glu Leu Ile Gln Gln Glu Leu Asp His Val Val Glu Glu Leu  
 450 455 460  
 Glu Lys Ile Ala Ile Val Arg Leu Leu Gln Gln Arg Ala Ile Ile Ser  
 465 470 475 480  
 Leu Ile Gly Asn Val Glu Gln Ser Ser Leu Ile Leu Glu Lys Thr Gly  
 485 490 495  
 Arg Val Leu Arg Lys Ser Gly Val Asn Val Gln Met Ile Ser Gln Gly  
 500 505 510  
 Ala Ser Lys Val Asn Met Ser Leu Ile Val His Asp Ser Asp Ala Lys  
 515 520 525  
 Ala Leu Val Glu Ala Leu His Gln Ala Phe Phe Glu Asp Asp Val Leu  
 530 535 540  
 Ser Gln Val Glu Ala Glu Asn Leu Leu Val Gly  
 545 550 555

<210> 9  
 <211> 455  
 <212> DNA  
 <213> Oryza sativa

<220>  
 <221> unsure  
 <222> (366)

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 <222> (455)

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 aatccaatca ccctgtaacc tctttgcaac agcaggatat gtcgcttcaa gaatgtccgc 180  
 atttgtgaaa tcatcagtag ttataaagcc aatatcaa at gcatcatact gccgagcctt 240  
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 aaacaaggta atcccgtgtc ctaaggagtt aagttctttc aatcaatagc aacaccctta 360  
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<210> 10  
 <211> 114  
 <212> PRT  
 <213> Oryza sativa

<400> 10  
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 20 25 30  
 Gly Lys Lys Ala Arg Gln Tyr Asp Ala Phe Asp Ile Gly Phe Ile Thr  
 35 40 45  
 Thr Asp Asp Phe Thr Asn Ala Asp Ile Leu Glu Ala Thr Tyr Pro Ala  
 50 55 60  
 Val Ala Lys Arg Leu Gln Gly Asp Trp Ile Asp Asp Pro Ala Ile Pro  
 65 70 75 80  
 Ile Val Thr Gly Phe Leu Gly Lys Gly Trp Lys Ser Cys Ala Val Thr  
 85 90 95  
 Thr Leu Gly Arg Gly Gly Ser Asp Leu Thr Ala Thr Thr Ile Gly Lys  
 100 105 110  
 Ala Leu

<210> 11  
 <211> 847  
 <212> DNA  
 <213> Oryza sativa

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 gagggagggtg ttcgaggagg aggggattgg tgggtgcggtg ccagagcggg gcggcgggcg 120  
 ttgtcctcaa caaggacgac gcggcgctcg tggccgccgc cgccgcctcc tccgcgacgg 180  
 gggtcaccgt cgccatgaag ttcggcgggg cgtcgggtgg gtcggcgagg cggatgcggg 240

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aggtggccga tctcatactc agcttccccg aggagactcc cgttggtgtt ctctccgcca 300
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cgaaggcgctc tgaaattccc gagctcgagc ttatcaagga gctccatgtt aggactattg 420
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ttaagggtgt tgctatgatg aaagaactaa ctctaggac acgggattac cttgtttcct 540
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<210> 12  
 <211> 281  
 <212> PRT  
 <213> Oryza sativa

<400> 12

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Pro Pro Arg Val Gly Arg Glu Gln Gln Tyr Leu Ala Cys Ala Ala Ala
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Ala Arg Pro Gly Gly Arg Cys Ser Arg Arg Arg Gly Leu Val Val Arg
              20              25              30

Cys Gln Ser Gly Ala Ala Ala Val Val Leu Asn Lys Asp Asp Ala Ala
              35              40              45

Ser Val Ala Ala Ala Ala Ala Ser Ser Ala Thr Gly Phe Thr Val Ala
  50              55              60

Met Lys Phe Gly Gly Ser Ser Val Ala Ser Ala Glu Arg Met Arg Glu
  65              70              75              80

Val Ala Asp Leu Ile Leu Ser Phe Pro Glu Glu Thr Pro Val Val Val
              85              90              95

Leu Ser Ala Met Gly Lys Thr Thr Asn Asn Leu Leu Leu Ala Gly Glu
 100              105              110

Lys Ala Val Ser Cys Gly Ala Pro Lys Ala Ser Glu Ile Pro Glu Leu
 115              120              125

Ala Val Ile Lys Glu Leu His Val Arg Thr Ile Asp Glu Leu Gly Leu
 130              135              140

Asp Arg Ser Ile Val Ser Gly Leu Leu Glu Glu Leu Glu Gln Leu Leu
 145              150              155              160

Lys Gly Val Ala Met Met Lys Glu Leu Thr Pro Arg Thr Arg Asp Tyr
              165              170              175

Leu Val Ser Phe Gly Glu Cys Met Ser Thr Arg Ile Phe Ala Ala Tyr
 180              185              190

Leu Asn Lys Leu Gly Lys Lys Ala Arg Gln Tyr Asp Ala Phe Asp Ile
 195              200              205

Gly Phe Ile Thr Thr Asp Asp Phe Thr Asn Ala Asp Ile Leu Glu Ala
 210              215              220

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Thr Tyr Pro Ala Val Ala Lys Arg Leu Gln Gly Asp Trp Ile Asp Asp  
 225 230 235 240

Pro Ala Ile Pro Ile Val Thr Gly Phe Leu Gly Lys Gly Trp Lys Ser  
 245 250 255

Cys Ala Val Thr Thr Leu Gly Arg Gly Gly Ser Asp Leu Thr Ala Thr  
 260 265 270

Thr Ile Gly Lys Ala Leu Arg Thr Arg  
 275 280

<210> 13  
 <211> 646  
 <212> DNA  
 <213> Triticum aestivum

<220>  
 <221> unsure  
 <222> (289)

<220>  
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 <222> (329)

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 <222> (393)

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 <222> (582) .. (583)

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 <222> (632)

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 <222> (640)

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 ggacgagttg gagcaactgc tcaaggggtg tgctatgatg aaagagctga ctcttaggac 180  
 acgagattac cttgtttcct ttggtgaatg catgtctaca agaataattt ctgcatattt 240  
 gaataaacta ggggaagaagg cacgacagta tgatgctttt gatcttggnt ttataaccac 300  
 tggacgattt ccacaaatgc cgatatccnc gaacaactta tcctgctgtt gcaaagagct 360  
 acatgggaat tggttgatga ccctgctatc ccnatatgac ggttcccttg ggaagggatg 420  
 gaacttgatg ggcanaactt aggaaggggc ggaatgactt gacggcacia ccatgggaaa 480  
 cctgggggta agaaaatcag gttggaagat gtaacgggtt tgactgtgat caatattatc 540  
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 tcatcacacc aggagngacc cattcntaaa cnaaacntcn cccgga 646

<210> 14  
 <211> 146  
 <212> PRT  
 <213> Triticum aestivum

<220>  
 <221> UNSURE  
 <222> (110)

<220>  
 <221> UNSURE  
 <222> (131)

<220>  
 <221> UNSURE  
 <222> (145)

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 Val Ile Lys Glu Leu His Leu Arg Thr Ile Asp Glu Leu Gly Leu Asp  
 20 25 30  
 Ser Ser Ile Val Ser Gly Phe Leu Asp Glu Leu Glu Gln Leu Leu Lys  
 35 40 45  
 Gly Val Ala Met Met Lys Glu Leu Thr Leu Arg Thr Arg Asp Tyr Leu  
 50 55 60  
 Val Ser Phe Gly Glu Cys Met Ser Thr Arg Ile Phe Ser Ala Tyr Leu  
 65 70 75 80  
 Asn Lys Leu Gly Lys Lys Ala Arg Gln Tyr Asp Ala Phe Asp Leu Gly  
 85 90 95  
 Phe Ile Thr Thr Gly Arg Phe Pro Gln Met Pro Ile Ser Xaa Asn Asn  
 100 105 110  
 Leu Ser Cys Cys Cys Lys Glu Leu His Gly Asn Trp Leu Met Thr Leu  
 115 120 125

Leu Ser Xaa Tyr Asp Gly Ser Leu Gly Lys Gly Trp Asn Leu Cys Gly  
 130 135 140

Xaa Thr  
 145

<210> 15  
 <211> 1658  
 <212> DNA  
 <213> Triticum aestivum

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 20 25 30  
 Leu Gly Leu Asp Ser Ser Ile Val Ser Gly Phe Leu Asp Glu Leu Glu  
 35 40 45  
 Gln Leu Leu Lys Gly Val Ala Met Met Lys Glu Leu Thr Leu Arg Thr  
 50 55 60



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Thr 210	Arg	Ile	Phe	Ala	Ala	Tyr 215	Leu	Asn	Lys	Ile	Gly 220	Val	Lys	Ala	Arg
Gln 225	Tyr	Asp	Ala	Phe	Glu 230	Ile	Gly	Phe	Ile	Thr 235	Thr	Asp	Asp	Phe	Thr 240
Asn	Ala	Asp	Ile	Leu 245	Glu	Ala	Thr	Tyr	Pro 250	Ala	Val	Ala	Lys	Arg 255	Leu
His	Gly	Asp	Trp 260	Leu	Ser	Asp	Pro	Ala 265	Ile	Ala	Ile	Val	Thr 270	Gly	Phe
Leu	Gly	Lys 275	Ala	Arg	Lys	Ser	Cys 280	Ala	Val	Thr	Thr	Leu 285	Gly	Arg	Gly
Gly 290	Ser	Asp	Leu	Thr	Ala	Thr 295	Thr	Ile	Gly	Lys	Ala 300	Leu	Gly	Leu	Pro
Glu 305	Ile	Gln	Val	Trp	Lys 310	Asp	Val	Asp	Gly	Val 315	Leu	Thr	Cys	Asp	Pro 320
Asn	Ile	Tyr	Pro	Lys 325	Ala	Glu	Pro	Val	Pro 330	Tyr	Leu	Thr	Phe	Asp 335	Glu
Ala	Ala	Glu	Leu	Ala 340	Tyr	Phe	Gly	Ala 345	Gln	Val	Leu	His	Pro 350	Gln	Ser
Met	Arg	Pro 355	Ala	Arg	Glu	Ser	Asp 360	Ile	Pro	Val	Arg	Val 365	Lys	Asn	Ser
Tyr 370	Asn	Pro	Lys	Ala	Pro	Gly 375	Thr	Leu	Ile	Thr	Lys 380	Ala	Arg	Asp	Met
Ser 385	Lys	Ala	Val	Leu	Thr 390	Ser	Ile	Val	Leu	Lys 395	Arg	Asn	Val	Thr	Met 400
Leu	Asp	Ile	Ala	Ser 405	Thr	Arg	Met	Leu	Gly 410	Gln	Tyr	Gly	Phe	Leu 415	Ala
Lys	Val	Phe 420	Ser	Ile	Phe	Glu	Glu 425	Leu	Gly	Ile	Ser	Val 430	Asp	Val	Val
Ala	Thr	Ser 435	Glu	Val	Ser	Val	Ser 440	Leu	Thr	Leu	Asp 445	Pro	Ser	Lys	Leu
Trp 450	Ser	Arg	Glu	Leu	Ile	Gln 455	Gln	Ala	Ser	Glu	Leu 460	Asp	His	Val	Val
Glu 465	Glu	Leu	Glu	Lys	Ile 470	Ala	Val	Val	Asn	Leu 475	Leu	Gln	Asn	Arg	Ser 480
Ile	Ile	Ser	Leu	Ile 485	Gly	Asn	Val	Gln	Arg 490	Ser	Ser	Leu	Ile	Leu 495	Glu
Arg	Leu	Ser 500	Arg	Val	Leu	Arg	Thr 505	Leu	Gly	Val	Thr	Val 510	Gln	Met	Ile
Ser	Gln	Gly 515	Ala	Ser	Lys	Val	Asn 520	Ile	Ser	Leu	Val 525	Val	Asn	Asp	Ser



Glu Ala Glu Gln Cys Val Arg Ala Leu His Ser Ala Phe Phe Glu Ser  
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